

Gov. Doc.  
Can.  
Ag.

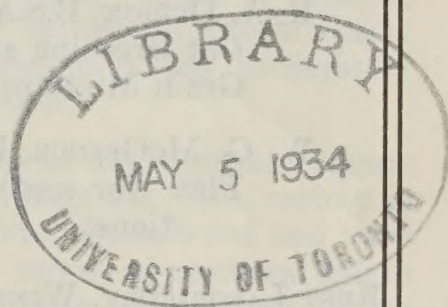
Canada Agric. Dept.

# THE BEST VARIETIES OF GRAIN

BY

CEREAL DIVISION  
CENTRAL EXPERIMENTAL FARM  
OTTAWA, ONT.

L. H. NEWMAN, Dominion Cerealists



DOMINION OF CANADA  
DEPARTMENT OF AGRICULTURE  
PAMPHLET No. 156—NEW SERIES  
REVISION OF PAMPHLET NO. 11—NEW SERIES

Published by Direction of the Hon. Robt. Weir, Minister of Agriculture,  
Ottawa, Canada, 1934



3 1761 12000942 8

## CEREAL DIVISION

---

L. H. NEWMAN, B.S.A., Dominion Cerealists.

### CEREALISTS:

J. G. C. FRASER, B.S.A., Chief Assistant—  
Spring Wheat Breeding and Investigations.

P. T. COWAN, B.S.A.—  
Barley and Pea Breeding and Investigations.

A. G. O. WHITESIDE, B.S.A., M.S.—  
Flour Quality Investigations.  
Autumn Wheat and Rye Breeding and Investigations.

R. A. DERICK, B.S.A., M.Sc.—  
Oat Breeding and Investigations.  
Grain Mixtures.

W. G. MCGREGOR, B.S.A., M.S.—  
Flax (for seed), Hemp, Buckwheat and Bean Breeding and Investigations.

### RUST LABORATORY, WINNIPEG, MAN.:

Senior Cereal Specialist .....	C. H. GOULDEN, Ph.D.
Cereal Specialist .....	K. W. NEATBY, M.S.A., Ph.D.
Cerealists .....	J. N. WELSH, M.S.A.



# THE BEST VARIETIES OF GRAIN

The varieties of grain which are most suitable for propagation in different sections throughout Canada have been determined by exacting comparative tests conducted for a period of years at Experimental Stations and by farmers throughout the Dominion. In these tests have been included large numbers of varieties which have been produced either in Canada or in other countries. Some of these have found their way into cultivation prematurely and frequently to the farmers' disadvantage.

While it is admitted that conditions on a given farm may differ to some extent from those on the nearest Experimental Farm or Station, experience has clearly shown that the recommendations of these institutions can usually be adopted fairly safely.

It is the hope of the authors of this pamphlet that the final choice as to the varieties which the farmer chooses for his own particular location may be facilitated by the following brief description of those varieties which, up to the present, have proven of greatest general value.

## DESCRIPTIONS OF LEADING VARIETIES

### Spring Wheat

**CERES.**—The result of a cross by Professor Waldron, North Dakota Experiment Station, Fargo, N.D., between Marquis and Kota. This variety is bearded, with white, smooth chaff; kernels red, rather long and hard; straw of medium length but only fair strength; matures with Marquis and yields exceptionally well; is rather susceptible to both loose and stinking smut but moderately resistant to stem rust; quality for bread making excellent.

**GARNET OTTAWA 652.**—The result of a cross made at the Central Experimental Farm, Ottawa, in 1906 between Preston A. and Riga M. The variety is beardless with short apical awns; chaff smooth and white; kernels red and very hard; matures three to ten days ahead of Marquis; straw of medium length and strength; yields extremely well both in the east and west. The kernel retains its red colour and hardness exceptionally well under conditions which tend to make Marquis "go starchy"; flour inferior to that of Marquis in baking strength and more creamy in colour. The more vitreous type of kernel of Garnet necessitates slightly different preparation for milling for best results.

**HURON OTTAWA 3.**—Originated from a cross made at the Central Experimental Farm, Ottawa, in 1888, between White Fife and Ladoga. This variety is bearded with brown, smooth chaff; kernels large and red; matures with Marquis at Ottawa; straw of good length and exceptional strength; occupies first place at Ottawa in yield; rather susceptible to loose smut and bunt; produces flour of a slightly yellow colour and of only fair strength.

**MARQUIS OTTAWA 15\*.**—Produced at the Central Experimental Farm, Ottawa, in 1892 from a cross between Red Fife and Hard Red Calcutta; has been the leading wheat in Canada for many years; heads beardless but with short tip awns; chaff smooth and white; kernels dark red and hard, does not shatter readily; straw of good length and strength; very productive, especially on the rich prairie soils of Western Canada; grain inclined to "piebald" where moisture is in excess; susceptible to stem rust but moderately resistant to loose smut and bunt; flour of excellent quality.

\* For more detailed description of Marquis see pamphlet No. 95—New Series—Dominion Department of Agriculture, 1928—"Marquis Wheat, description of the Standard Type" by L. H. Newman and J. G. C. Fraser, Dominion Experimental Farm, Ottawa, Ont.



**RED BOBS SELECTIONS.**—The original Red Bobs as developed by Seager Wheeler, Rosthern, Saskatchewan, and reselected by him, yielded two outstanding forms to which he gave the names *Early Triumph* and *Supreme*. In general appearance these two forms are very much alike, both being absolutely bald and producing the same compact type of head. In maturity *Supreme* ripens a day or two later than *Early Triumph*, which latter in turn matures as a rule from three to five days ahead of *Marquis*. Another selection, designated Red Bobs 222 by the University of Alberta, is almost identical with *Early Triumph*.

In milling and baking quality these wheats are very similar, but are not considered quite the equal of *Marquis*. The grain of these varieties, however, is inclined to "go starchy" where moisture is abundant, being worse in this respect than *Marquis*.

**RED FIFE OTTAWA 17.**—This late-maturing, hard, red spring wheat was the standard of quality upon which our original commercial wheat grades were based. While some of the newer introductions equal Red Fife in quality, none can claim to have excelled it to any worthwhile extent.

This variety produces oblong and beardless heads bearing a few apical awns of varying length. The straw is of good length but only average strength. Being very susceptible both to stinking smut and stem rust and also maturing late, it has given way almost exclusively to such varieties as *Marquis*, *Reward*, and *Garnet*.

**REWARD OTTAWA 928.**—Produced at the Experimental Farm, Ottawa, from a cross made in 1912 between *Marquis* and *Prelude*. The head of this variety presents a rather ragged appearance owing to the irregular distribution and arrangement of the spikelets. It is also beardless except for a few irregular apical awns which are inclined to be dark in colour toward the base. The chaff is white but is covered with fine hairs (pubescence). The kernels are dark red and of unusual size and weight. The straw is of medium length and above the average in strength. In maturity this variety ripens as a rule from one to three days later than *Garnet* but in yielding ability usually ranks appreciably lower than the latter variety, although in the Park Belt of Western Canada it has been giving fairly satisfactory returns. While it does not appear to possess the ability to resist either loose smut or bunt, it appears to be able to cope with mild epidemics of stem rust reasonably well.

In milling and baking quality *Reward* is considered equal if not actually superior to *Marquis*, being usually significantly higher in protein and capable of producing flour of good quality even when grown in areas which tend to produce flour of lower baking quality.

**WHITE RUSSIAN.**—A selection made many years ago from Red Fife, to which it bears a strong resemblance. The head is beardless with short apical awns, the chaff being white and smooth. The kernels are large and rather open. The straw is of good length and of fair strength. Like Red Fife, this variety ripens late. In milling and baking quality White Russian is considered a relatively poor variety. It is not recommended anywhere in Canada excepting in certain sections of the Maritime Provinces, where it has been grown for many years with fair success.

### Durum Wheats

**GOOSE.**—A trade name commonly applied to durum wheats in general, although the wheat grown under this name appears to be practically identical with the variety known as *Arnautka*. It resembles *Kubanka* fairly closely although the heads are rather longer and more open.

**KUBANKA OTTAWA 37.**—A pure line selection made at Ottawa from *Kubanka* (Washington No. 5639), a bearded variety with smooth chaff having a slightly



reddish tinge. Kernels amber coloured, very large and very hard; straw long and generally below average in strength. Good yields are often obtained in some years. The semolina from this variety is valued highly for the manufacture of macaroni.

**MINDUM.**—A selection from a common wheat known as *Hedgerow*, made at University Farm, St. Paul, Minnesota, almost forty years ago. It is very similar to *Goose* except that it is slightly earlier and is more resistant to stem rust. This variety is now the leading durum variety in Western Canada.

### Oats\*

**ALASKA.**—Introduced into Canada in 1900 from the United States, this variety soon became recognized as an excellent early variety for Eastern Canada. It is a particularly high quality oat carrying only about 20 per cent hull; has relatively long, strong straw, tillering rather sparsely. In view of the low percentage of hull, the yield of kernel per acre is only slightly lower than that of the better medium-late maturing varieties.

**ANTHONY.**—A hybrid produced at the Minnesota Agricultural Experiment Station from a cross between *White Russian* and *Victory*. It matures at about the same time as *Banner* and has strong straw of fair length. It is resistant to stem rust of oats but susceptible to both crown rust and smut. In view of its stem rust resistance it has been introduced into Manitoba, where it has been yielding well in comparison with *Banner*.

**BANNER.**—A medium late variety introduced from the United States by the Ontario Agricultural College in 1890. Since that time many strains of this variety have been developed, of which "*Banner Ottawa 49*" has proven one of the best.

This variety produces straw of good length and fair strength. It is also a good yielder and, being widely adapted to Canadian conditions, has been one of the most popular varieties in this country for many years.

**CARTIER.**—A production of Macdonald College, Quebec, the result of a cross between *Alaska* and *Early Triumph*. This variety is early and practically identical with *Alaska* in plant and grain characters. It has been widely distributed in the province of Quebec during the past few years and since it yields slightly better than *Alaska*, may replace the latter variety as the standard early oat for Eastern Canada.

**GOLD RAIN.**—A yellow-grained variety of medium maturity, of Swedish origin. A good quality variety having straw of medium length and good strength. While well adapted to Canadian conditions generally, this variety seems better able to produce fair returns under adverse conditions than other standard sorts. This applies chiefly in Eastern Canada.

**GOPHER.**—Obtained as a selection from the variety *Sixty Day* by the Minnesota Experiment Station. It is early maturing with short, stiff straw. In Western Canada it has yielded exceptionally well and has become the standard early variety for that section of the country. This variety is not recommended for poor soils on account of its short straw.

**LEGACY.**—A new promising variety produced by the Cereal Division, Central Experimental Farm, Ottawa, from a cross between *Banner* and *Eighty Day*. It is about one week earlier ripening and a little shorter and stronger in the straw than *Banner*. The grains are rather slender but of good quality. This variety

\* For more detailed descriptions of those of the above varieties of which registered seed is available see Bull. 147—New Series—Dom. Dept. of Agr., 1931—"Standard descriptions of Registered Oat varieties" by R. A. Derick, Dominion Experimental Farm, Ottawa.



is very productive but seems rather limited in its adaptation. It has done particularly well in Northern Saskatchewan, Central and Northern Alberta, and in the Eastern Townships of Quebec.

O.A.C. 72.—A selection out of Siberian by the Ontario Agricultural College. On the average it is a few days later than Banner and has slightly longer and weaker straw, especially when grown on the heavier soils. On the lighter soils of Ontario, however, and where the season is long, this variety is one of the best yielding sorts.

O.A.C. 144.—A late maturing selection out of O.A.C. 72 made by the Ontario Agricultural College. This variety is tall, has good strength of straw and is apparently adapted to the heavier soils of Southwestern Ontario, where the college reports it to have outyielded other varieties over a period of five years.

VICTORY.—A medium late variety of Swedish origin producing straw of good length and strength. This variety is widely adapted to the soils and climate of Canada, occupying, in fact, a foremost place from the standpoint of yield.

WHITE CROSS.—Selected from a cross between Big Four and Sixty Day at the Wisconsin Experiment Station. This variety is only a few days later than Alaska. It has relatively long straw of fair strength, while the grain is long and somewhat slender but possesses exceptionally white colour. While giving good yields under average conditions, White Cross appears to be best adapted to Northern Alberta conditions.

NOTE.—All of the above varieties are of the spreading panicle type and all have white grains except Gold Rain.

## Barley

### SIX-ROW VARIETIES

O.A.C. 21.—A rough awned medium early variety selected from barley of Asiatic origin by the Ontario Agricultural College. The straw is of fair length but somewhat weak. This variety is the most widely grown barley in Canada, giving fair yields under diverse conditions, and may be safely grown in six-row barley districts. It is acceptable to the malting trade.

TREBI.—A very rough awned, coarse variety introduced from Asia. Like O.A.C. 21, it has a blue aleurone (surface of kernel under the hull). Its maturity is similar to O.A.C. 21, while its straw is shorter and stronger. Trebi outyields all other barleys so far tested but the grain is rather coarse and when fed to young stock and poultry, caution should be observed. This variety is not liked by the Canadian maltster.

### TWO-ROW VARIETIES

CANADIAN THORPE.—A broad-eared or "duck-bill" type of barley with very strong straw of good length and giving fair yields where conditions are good. It is well liked in certain parts of the West, but more especially in Alberta.

CHARLOTTETOWN 80.—A selection made from Old Island Two Row at the Experimental Station at Charlottetown, P.E.I. It is a Chevalier type of barley of medium to late maturity with a long, fairly strong straw for a barley of this type. The heads are medium in length, the awns having a tendency to drop at harvest time. Under Maritime conditions for which this variety seems particularly adapted, the yields are relatively high.

HANNCHEN.—A medium early variety of Swedish origin producing straw of only fair length and strength. It has given remarkably high yields in certain parts of Western Canada, but more especially in Saskatchewan. Its straw is inclined to be weak under conditions where moisture is plentiful.



## SMOOTH-AWNED BARLEYS

Of recent years a number of promising smooth-awned barleys have been produced by different plant-breeding institutions, including the Dominion Experimental Farms, but these have not yet been tested for a sufficient length of time to say which is most desirable. For the present, however, the variety called Velvet is favoured for Eastern Canada, while Regal appears most promising in the West.

## BEARDLESS OR HOODED TYPES

COLSESS.—A hooded six-rowed barley giving good yields in the northern sections of the West and maturing early. The straw is of fair length and excellent strength.

SUCCESS.—Sometimes known as *Sol* and *Sixty-day*; a low-yielding but very early six-rowed variety of value as a combater of wild oats.

## Field Peas

ARTHUR OTTAWA 18.—A cross-bred variety of medium early maturity; vines coarse and of medium length; flowers borne at the top of the vine. This is the most commonly grown variety for the pea soup trade. The yields are above the average under varying conditions, which accounts for the popularity of this variety over a wide range of conditions. The seeds are of medium size and creamy-white in colour.

CANADIAN BEAUTY.—A late maturing variety; grain creamy-white in colour and very large, necessitating care in handling and threshing; vine of good length; yield very similar to that of Arthur. The demand for this variety is limited.

CHANCELLOR OTTAWA 26.—An early variety with long, slender vines, the flowers being borne in the axils of the leaves. The seeds are small and creamy in colour; yield usually higher than that of Arthur.

EARLY BLUE OTTAWA 21.—A very early maturing, high yielding variety; vines normally very short; seeds blue and of medium size, slightly wrinkled.

GOLDEN VINE.—A late maturing pea with long vines; seeds are very similar in size to Chancellor. Several early selections have been made from this variety, which are identical with Chancellor.

MACKAY.—A high yielding variety producing very long vines. The seeds are distinguished by a black "eye" or hilum and are, therefore, not wanted by the soup trade. The maturity is late.

STIRLING.—Very similar in most respects to Canadian Beauty. The yields usually are not high. Popular in parts of British Columbia.

## Flax for Seed

BISON.—A production of the North Dakota Agricultural Experiment Station which has become quite popular. It produces plants of good height, dark blue, medium sized flower with brown seed that is very large and uniform. This variety matures a few days later than the average variety but is highly resistant to both wilt and rust.

BUDA.—Another introduction from North Dakota which has also been yielding well in Canada. This is a blue flowering variety, resistant to wilt and rust, about the same height as Bison, but maturing a few days earlier. The seed is brown, very small and plump.



**CROWN.**—A selection introduced by the University of Saskatchewan resembling Novelty in its plant characters and in its susceptibility to flax wilt. It yields well, however, under conditions where wilt is not a factor.

**NOVELTY OTTAWA 53.**—A pure line selection made at Ottawa from an introduction supposed to be of Russian origin. It produces plants of average height with light blue flowers of medium size and light brown seed. This variety has produced very good yields over quite a wide range of conditions, but cannot be recommended over the above varieties, however, because of its extreme susceptibility to flax wilt.

**PREMOST.**—A Minnesota selection which is quite productive. The seeds are smaller and darker in colour than Novelty. It is also very susceptible to flax wilt.

**RED WING.**—A Minnesota production only recently licensed for sale in Canada. It belongs to the small-seeded class of blue flowering varieties and is fairly resistant to wilt. It appears especially promising on account of its earliness and apparent yielding capacity.

### Field Beans<sup>1</sup>

**BURBANK.**—An early maturing white pea bean, recommended for trial in districts where early maturity is essential. It is somewhat susceptible to mosaic and anthracnose.

**NAVY OTTAWA 711.**—A pure line selection of medium-sized white beans obtained from the commercial Navy bean. This variety ripens early and is somewhat susceptible to mosaic and anthracnose but is very productive.

**NORWEGIAN OTTAWA 710.**—A yellowish-brown bean of medium size and elongated shape selected from a variety received from Norway. It is a very early maturing variety, and considering its earliness, is very productive. The plants are short and generally free from disease. It is recommended for districts where the summer season is very short.

**ROBUST.**—A pure line selection developed by the Michigan Experiment Station. This variety is quite resistant to mosaic and anthracnose and is a consistently good yielder. Being one of the later maturing varieties, it cannot be recommended, however, for districts where early autumn frosts are a hazard. It is a small white pea type.

### Buckwheat

**JAPANESE.**—Produces on the average better than Silverhull. The seed is large, smooth, and dark in colour.

**RYE OR ROUGH BUCKWHEAT.**—A very productive type maturing a few days earlier than Silverhull or Japanese. The hull of the seed is rough and grey in colour and the seed quite small.

**SILVERHULL.**—Popular with some on account of the bright grey colour of the seed.

<sup>1</sup> For further information see Pamphlet No. 141. New Series—Dominion Department of Agriculture, Ottawa, 1931, "Field Beans in Canada," by W. G. McGregor.



## VARIETIES RECOMMENDED BY THE DOMINION CEREALIST

The names are arranged in alphabetical order. A careful study of the descriptions given in this pamphlet should be made before deciding what varieties to sow. For further information it is suggested that the superintendent of the nearest Experimental Station be communicated with.

### Maritime Provinces

*Spring Wheat*.—Garnet Ottawa 652, Huron Ottawa 3, White Russian.

*Oats*.—Alaska, Banner Ottawa 49, Gold Rain, Laurel Ottawa 477, Victory.

*Barley*.—Charlottetown No. 80, O.A.C. No. 21.

*Field Peas*.—Arthur Ottawa 18, Chancellor Ottawa 26, Mackay Ottawa 25.

*Field Beans*.—Navy Ottawa 711, Norwegian Ottawa 710, Robust.

### Quebec

*Spring Wheat*.—Garnet Ottawa 652, Huron Ottawa 3, Marquis Ottawa 15, Reward Ottawa 928.

*Oats*.—Alaska, Banner Ottawa 49, Cartier, Gold Rain, Legacy Ottawa 678, Laurel Ottawa 477 (Hulless), Victory.

*Barley*.—O.A.C. No. 21, Charlottetown No. 80.

*Field Peas*.—Arthur Ottawa 18, Chancellor Ottawa 26, Mackay Ottawa 25, O.A.C. No. 181.

*Field Beans*.—Navy Ottawa 711, Norwegian Ottawa 710, Robust.

### Ontario\*

*Spring Wheat*.—Garnet Ottawa 652, Huron Ottawa 3, Marquis Ottawa 15, Goose (Durum), Mindum (Durum).

*Oats*.—Alaska (very early), Banner Ottawa 49, Cartier, Gold Rain, Laurel Ottawa 477 (Hulless), O.A.C. No. 72, O.A.C. 144.

*Barley*.—O.A.C. No. 21.

*Field Peas*.—Arthur Ottawa 18, Chancellor, Golden Vine, Mackay Ottawa 25, O.A.C. 181.

*Field Beans*.—Navy Ottawa 711, Norwegian Ottawa 710, Robust.

*Flax for Seed*.—Bison, Novelty Ottawa 53, Red Wing.

### Manitoba

*Spring Wheat*.—Ceres, Marquis Ottawa 15, Mindum (Durum), Reward Ottawa 928.

*Oats*.—Alaska (very early), Anthony, Banner Ottawa 49, Gopher, Laurel Ottawa 477 (Hulless), Victory.

*Barley*.—O.A.C. No. 21, Trebi.

*Field Peas*.—Arthur Ottawa 18, Chancellor Ottawa 26, Mackay Ottawa 25, O.A.C. 181.

---

\* For information re winter wheat in Ontario see pamphlet 154 New Series.



*Field Beans*.—Norwegian Ottawa 710, Navy Ottawa 711.

*Flax for Seed*.—Bison, Buda, Crown, Novelty Ottawa 53, Premost.

### Saskatchewan

*Spring Wheat*.—Ceres, Garnet Ottawa 652,\* Marquis Ottawa 15, Mindum, Reward Ottawa 928, Red Bobs Selections (Early Triumph, Supreme, Red Bobs 222).

*Oats*.—Banner Ottawa 49, Gopher, Laurel Ottawa 477 (Hulless), Victory.

*Barley*.—Colsess (awnless), Hannchen (two-rowed), O.A.C. No. 21, Trebi.

*Field Peas*.—Arthur Ottawa 18, Chancellor Ottawa 26, Mackay Ottawa 25, O.A.C. 181.

*Field Beans*.—Norwegian Ottawa 710, Navy Ottawa 711.

*Flax for Seed*.—Bison, Buda, Crown, Novelty Ottawa 53, Premost.

### Alberta

*Spring Wheat*.—Garnet Ottawa 652,\* Marquis Ottawa 15, Reward Ottawa 928, Red Bobs Selections (Early Triumph, Supreme, Red Bobs 222).

*Oats*.—Alaska (very early), Banner Ottawa 49, Gopher, Legacy Ottawa 678, Laurel Ottawa 477 (Hulless), Victory, White Cross.

*Barley*.—Colsess (awnless), Hannchen (two-rowed), O.A.C. No. 21, Trebi.

*Field Peas*.—Arthur Ottawa 18, Chancellor Ottawa 26, Mackay Ottawa 25, O.A.C. 181.

*Field Beans*.—Burbank, Norwegian Ottawa 710.

*Flax for Seed*.—Bison, Buda, Crown, Novelty Ottawa 53, Premost.

### British Columbia

In this province the climatic variations are extreme—greater than in any other province of the Dominion. Every variety in the following list is desirable for some localities, but may be quite unsuited to others:—

*Spring Wheat*.—Garnet Ottawa 652, Marquis Ottawa 15, Reward Ottawa 928, Red Bobs Selections (Early Triumph, Supreme, Red Bobs 222).

*Oats*.—Alaska (very early), Banner Ottawa 49, Gold Rain, Laurel Ottawa 477 (Hulless), Victory.

*Barley*.—Haanchen, O.A.C. No. 21, Trebi.

*Field Peas*.—Arthur Ottawa 18, Chancellor Ottawa 26, Golden Vine, Mackay Ottawa 25, O.A.C. 181.

*Field Beans*.—Burbank, Navy Ottawa 711, Norwegian Ottawa 710.

---

\* Recommended only where other varieties unsuitable.























